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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/927,049      | 08/09/2001  | Takeo Tanaami        | 010814              | 4111             |

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09/03/2003

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EXAMINER

BEISNER, WILLIAM H

ART UNIT

PAPER NUMBER

1744

DATE MAILED: 09/03/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

g.

**Office Action Summary**

Application No.

09/927,049

Applicant(s)

TANAAMI, TAKEO

Examiner

William H. Beisner

Art Unit

1744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 Aug. 2001 (preliminary amendment).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 10-29 is/are pending in the application.
- 4a) Of the above claim(s)        is/are withdrawn from consideration.
- 5) ☐ Claim(s)        is/are allowed.
- 6) ☒ Claim(s) 10-29 is/are rejected.
- 7) ☐ Claim(s)        is/are objected to.
- 8) ☐ Claim(s)        are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on        is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No.       .  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s).
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s)        6) ☐ Other:

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## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 10-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 recites that the container “contains a biopolymer”. This claim language is indefinite because it is not clear if the instant claim language is reciting biopolymer that is immobilized within the container for the hybridization reaction or merely biopolymer that is part of the sample to be detected in the sample fluid. The difference between the two limitations would result of devices of two different structures when applying prior art against the claims. Clarification and/or correction is requested.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 10, 11, 14-16, 18, 19 and 22-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Choong et al.(US 6,238,909).

With respect to claim 10, the reference of Choong et al. discloses a measuring device for hybridization of biopolymers. The device includes a container (10) that is separate and removable from the rest of the device. The device also includes electrodes (30) that are electrically insulated from the container.

With respect to claims 11 and 19, the container or substrate is disclosed as being a film (See column 6, lines 10-11).

With respect to claims 14 and 22, the reference discloses that the electrodes can contact the substrate as long as they do not contact the buffer in contact with the substrate (See column 9, lines 37-39).

With respect to claims 15, 16, 23 and 24, the reference discloses the use of conductive polymers and indium-tin oxide, both of which are known to be transparent (See column 8, lines 14-38).

With respect to claim 18, the reference discloses that the device includes means for altering the direction of the electric field (See column 11, lines 54-63).

6. Claims 10, 11, 14, 18, 19 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Wen-Tung et al.(US 2001/0005718).

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With respect to claim 10, the reference of Wen-Tung et al. discloses a measuring device for hybridization of biopolymers. The device includes a container (5 or 1) that is separate and removable from the rest of the device. The device also includes electrodes (2 or 3) that are electrically insulated from the container.

With respect to claims 11 and 19, the container or substrate is disclosed as being a film (See element 5 of Figure 2).

With respect to claims 14 and 22, the reference discloses that the bottom electrode (2) is in mechanical contact with the container (1) (See Figure 2).

With respect to claim 18, the reference discloses that the device includes means for altering the direction of the electric field (See page 4, paragraph 0055).

#### Allowable Subject Matter

7. Claims 12, 13, 17, 20, 21 and 25-29 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

The above claims would be allowable because the prior art of record fails to teach or fairly suggest a hybridization detection device that includes a container that is removable and separate from the electrodes wherein the electrodes are provided with protrusions formed at special positions corresponding to sites where the biopolymers gather within the container.

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***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

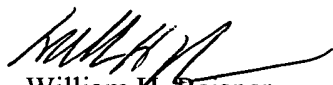
The references of Heller et al.(US 5,605,662) and Ackley et al.(WO 97/39144) are cited as prior art references that pertain to the use of electric fields during hybridization reactions.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Beisner whose telephone number is 703-308-4006.

The examiner can normally be reached on Tues. to Fri. and alt. Mon. from 6:40am to 4:10pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Warden can be reached on 703-308-2920. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

  
William H. Beisner  
Primary Examiner  
Art Unit 1744

WHB